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| Form PTO-1449 LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Us several sheets if necessary) | ATTORNEY DOCKET NO. 10003976-4 | SERIAL NO. TBA |
| | APPLICANT Moll <i>et al.</i> | |
| | FILING DATE TBA | GROUP TBA |

REFERENCE DESIGNATION
U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME |
|------------------|----|-----------------|----------|-------------------|
| | AA | 6,388,307 | 05/14/02 | Kondo et al. |
| | AB | 2002/0027232 A1 | 03/07/02 | Shigematsu et al. |
| | AC | 6,339,233 | 01/15/02 | Lell |
| | AD | 6,316,795 | 11/13/01 | Croke, III |
| | AE | 6,251,738 | 06/26/01 | Huang |
| | AF | 5,387,808 | 02/07/95 | Nozu |
| | AG | 5,349,201 | 09/20/94 | Stanchina et al. |
| | AH | 4,821,082 | 04/11/89 | Frank et al. |

FOREIGN PATENT DOCUMENTS

| | | DOCUMENT NUMBER | DATE | NAME | TRANSLATION YES | TRANSLATION NO |
|--|----|-----------------|----------|-----------------------|-----------------|----------------|
| | BA | EPO-0571994A2 | 05/27/93 | Stanchina, William E. | X | |
| | BB | JP-6-224230 | 08/12/94 | Yashiki et al. | | X |
| | BC | WO 01/09957 A1 | 02/08/01 | Micovic, Miroslav | X | |

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

| | | |
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| | CA | Bell Telephone Laboratories, Inc., Semiconductor Device, Physics and Technology, S.M. SZE, AT&T Bell Laboratories, 1985, (267-269) |
| | CB | G.J. Sullivan, et al., MBE Growth and Characterization of High Gain AlGaAs/GaAsSb/GaAs NpN HBTs, <i>Inst. Phys. Conf. Ser. No.120: Chapter 13, 1991 (647-650)</i> |
| | CC | N. Matine, et al., Electrical Stress Damage Reversed in Non-Passivated Fully Self-Aligned InP HBTs By Ozone Surface Treatment, <i>Electronics Letters, December 9, 1999, Vol. 35, No. 25</i> |
| | CD | C.R. Bolognesi, et al., High Performance InP/GaAsSb/InP DHBT s With Heavily Doped Base Layers, <i>2000 IEEE, (12-18)</i> |
| | CE | S.P. Watkins, et al., Heavily Carbon-Doped GaAsSb Grown on InP For HBT Applications, <i>Journal of Crystal Growth 221 (2000) (59-65)</i> |
| | CF | M.W. Dvorak, et al. Abrupt Junction InP/GaAsSb/InP Double Heterojunction Bipolar Transistors With f_t as High As 250 GHz and $BV_{CEO} > 6V$, <i>2000 IEEE (178-181)</i> |
| | CG | Tohru Oka, et al. Low Turn-on Voltage GaAs Heterojunction Bipolar Transistors With a Pseudomorphic GaAsSb Base, <i>Applied Physics Letters, Vol 78, No. 4, 2001, (483485)</i> |
| | CH | M.W. Dvorak, et al., MOCVD-Grown 175 GHz InP/GaAs _x Sb _{1-x} /InP DHBTs With High Current Gains Using Strained and Heavily C-Doped Base Layers |

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| EXAMINER | DATE CONSIDERED |
|----------|-----------------|

* Copies of these references are not enclosed Pursuant to 37 CFR 1.98(d). (See accompanying IDS)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Invent r(s): Moll et al.

Serial No.: TBA

Examiner: TBA

Filing Date: November 12, 2003

Group Art Unit: 0

Title: THIN GALLIUM ARSENIDE ANTIMONIDE BASE HETEROJUNCTION BIPOLAR TRANSISTOR (HBT)
HAVING IMPROVED GAIN

COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

This Information Disclosure Statement is submitted:

- (a) ☒ Under 37 CFR 1.97(b).
(Within three months of filing national application; or date of entry of national application; or before mailing date of first Office action on the merits; whichever occurs last).
- (b) ☐ Under 37 CFR 1.97(c) together with *either* a:
☐ Statement under CFR 1.97(e), or
☐ \$180.00 fee under 37 CFR 1.17(p).
(After the CFR 1.97(b) time period, but before a final action or notice of allowance, whichever occurs first).
- (c) ☐ Under 37 CFR 1.97(d) together with: a
Statement under 37 CFR 1.97(e), *and*
\$180.00 fee as set forth in 37 CFR 1.17(p).
(After a final action or notice of allowance, whichever occurs first, but before payment of the issue fee).

☐ STATEMENT UNDER 37 CFR 1.97(e)

The undersigned certifies that:

- ☐ Each item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the statement, *or*
- ☐ No item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, was known to any individual designated in 37 CFR § 1.56(c) more than three months prior to the filing of the Information Disclosure Statement.

☒ PRIOR APPLICATIONS

References identified with an asterisk (*) in the enclosed PTO Form 1449, were disclosed in prior Patent Application No. 9796299, filed February 27, 2001, now U.S. Patent No. , and, as such, copies thereof are not included pursuant to the provisions of 37 CFR 1.98(d).

☐ FOREIGN LANGUAGE DOCUMENTS

A concise explanation of the relevance of foreign language patents, foreign language publications and other foreign language information listed on PTO form 1449, as presently understood by the individual(s) designated in 37 CFR 1.56(c) most knowledgeable about the content is given on the attached sheet, or where a foreign language patent is cited in a search report or other action by a foreign patent office in a counterpart foreign application, an English language version of the search report or action which indicates the degree of relevance found by the foreign office is listed on form PTO 1449 and is enclosed herewith.

☒ **FEE AUTHORIZATION**

Please charge to Deposit Account **50-1078** the sum of _____. At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account **50-1078** pursuant to 37 CFR 1.25.

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☐ I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office on the date shown below.

Date of Facsimile:

Typed Name: Michael Laird

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Respectfully submitted,
NEEDLE & ROSENBERG, P.C.

By _____

Michael J. Tempel
Attorney/Agent for Applicant(s)

Reg. No. 41,344

Date: November 12, 2003

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